

REMARKS

By this amendment, Claims 48-59 have been amended. Amendment is made without acquiescence to the position of the Office Action or prejudice to pursue the claims as previously presented in a continuation application. No claims have been cancelled. Claims 60-62 have been added. Hence, Claims 48-62 are pending in the application.

CORRECTION OF ATTORNEY DOCKET NUMBER IS REQUESTED

Applicants respectfully request that the Attorney Docket Number associated with the present application be changed from “SUN-7089” to “15437-0684.”

CLAIMS 56-59 ARE IN CONFORMANCE WITH 35 U.S.C. § 101

Claims 56-59 were rejected under 35 U.S.C. § 101 for allegedly being directed towards non-statutory subject matter. Claims 56-59 are amended herein to a form expressly recognized by 35 U.S.C. § 112, paragraph 6. Consequently, it is respectfully submitted that the rejection of Claims 56-59 has been overcome.

THE PENDING CLAIMS ARE PATENTABLE OVER THE CITED ART

Claims 48, 52, and 56 are rejected under 35 U.S.C. § 102(e) for allegedly being anticipated by U.S. Patent No. 6,247,141 issued to Holmberg (“*Holmberg*”). Claims 49-51, 53-55, and 57-59 are rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over *Holmberg* in view of U.S. Patent Application No. 2002/0162020 issued to Bellaton et al. (“*Bellaton*”).

Claims 48-59 have been amended to more clearly recite the subject matter for which the Applicants desire patent protection.

Each of the pending claims recites a combination of elements that are not disclosed, taught, or suggested by the cited art.

For example, Claim 48 recites:

A method implemented by a secondary server to maintain a secondary directory, comprising:
receiving notification from a primary server that a particular non-idempotent operation has been performed by the primary server on a primary directory;
in response to the notification, performing the particular non-idempotent operation on the secondary directory such that the secondary directory mirrors the primary directory;
receiving a request, from a client, to perform the particular non-idempotent operation on the secondary directory, wherein the client sends the request because the client has not received confirmation that the primary server has performed the particular non-idempotent operation on the primary directory;
recognizing that the particular non-idempotent operation, identified in the request, cannot be made on the secondary directory because the particular non-idempotent operation has already been made on the secondary directory as a result of receiving the notification from the primary server; and
in response to the recognition that the particular non-idempotent operation has already been made on the secondary directory, the secondary server sending an indication to the client that the particular non-idempotent operation was successfully performed on the secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving the request.
(emphasis added)

At least the above-underlined portion of Claim 48 is not disclosed, taught, or suggested by *Holmberg*.

Claim 48 recites an advantageous method for maintaining a second directory.

According to the approach of Claim 48, the secondary server receives a notification that a particular non-idempotent operation has been performed by a primary server on a primary directory. A non-idempotent operation is an operation that cannot be performed multiple

times without producing a semantically different result than when performed once. In response to receiving the notification, the particular non-idempotent operation is performed by the secondary server on the secondary directory such that the secondary directory mirrors the primary directory. The secondary server receives, from a client, a request to perform the particular non-idempotent operation on the secondary directory. The client sends the request because the client has not received confirmation that the primary server has performed the particular non-idempotent operation on the primary directory. The secondary server recognizes that the particular non-idempotent operation, identified in the request, cannot be made on the secondary directory because the particular non-idempotent operation has already been performed on the secondary directory as a result of receiving the notification from the primary server. In response to the secondary server recognizing that the particular non-idempotent operation has already been made on the secondary server, the secondary server sends an indication to the client that the particular non-idempotent operation was successfully performed on the secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving the request.

Advantageously, the approach of Claim 48 enables a client to receive an indication that a requested non-idempotent operation was successfully performed by the secondary server on the secondary directory even though the non-idempotent operation was performed **before** the request from the client was received by the secondary server.

Such an approach is not disclosed or suggested by *Holmberg*. *Holmberg* lacks any teaching or suggestion of even the concept of a directory. Instead, *Holmberg* teaches an approach for replicating information about the result of processing requests at a primary server (“primary server state information”) to a backup server, so that if the

primary server fails, the backup server can take over. In *Holmberg*, a client application sends requests to a primary server. The primary server processes the requests, and sends a response back to the client application. The primary server may occasionally cause primary server state information to be sent to a backup server that subsequently stores the primary server state information. The transmission of primary server state information from the primary server to the backup server acts as a “heartbeat,” thus, if the backup server does not hear from the primary server after a certain amount of time, the backup server will assume that the primary server has failed, and will initiate recovery procedures, e.g., it may become the primary server. (See Abstract, Col. 6, lines 29-57).

The primary server may also include primary server state information in the response sent from the primary server to the client application. Upon receiving the response, the client application automatically sends the primary server state information to the backup server. The backup server may acknowledge receipt of the primary server state information to the client application. In this way, the backup server receives primary server state information from both the primary server and the client application. (Col. 5, line 64 – Col. 6, line 19).

The approach of *Holmberg* is designed to maximize the amount of primary server state information sent to the backup server before the primary server fails. Thus, if the primary server fails before sending a set of primary server state information to the backup server, then backup server will still receive the primary server state information from the client application. In this way, when performing recovery procedures, the backup server may receive a copy of all the primary server state information up to when the primary server fails.

A point to note with regard to *Holmberg* is that while the backup server may acknowledge, to the client application, that a message was received (Col. 6, lines 24-28), the backup server does not send an indication to the client application that a particular non-idempotent operation was successfully performed on a secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving the request.

As a result of the fundamental differences between the features of Claim 48 and the teachings of *Holmberg*, numerous claim features of Claim 48 are not disclosed, taught, or suggested by *Holmberg*. For example, Claim 48 features “in response to the recognition that the particular non-idempotent operation has already been made on the secondary directory, the secondary server sending an indication to the client that the particular non-idempotent operation was successfully performed on the secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving the request.” The portion of *Holmberg* cited to show this feature (Col. 6, lines 19-28) merely states, *in toto*:

When the client application's protocol stack 205 receives the reply message 203, it does two things: 1) it passes the reply message 203 to the client application C, and 2) it sends a message 207 that may contain, for example, the original request as well as the reply to backup server's protocol stack 205', which passes it to the backup server S' 107. In some embodiments, the backup server's protocol stack 215' may send an acknowledgement message 211 to the client's protocol stack 205, thereby confirming receipt of the client's message. (emphasis added).

The position of the Office Action is that the client application of *Holmberg* is analogous to a client as claimed, the primary server of *Holmberg* is analogous to the primary server as claimed, and the backup server of *Holmberg* is analogous to the secondary server as claimed.

It is initially noted that nothing in the approach of *Holmberg* is analogous to a primary directory or a secondary directory. Thus, the position of the Office Action reads each element of Claim 48 so broadly as to ignore the subject matter of a primary directory and a secondary directory in the elements of Claim 48. As *Holmberg* lacks any suggestion of a directory, and each element of Claim 48 involves at least one directory, it necessarily follows that *Holmberg* lacks any teaching or suggestion of the approach of Claim 48.

Notwithstanding the lack of a teaching of a directory (let alone a primary directory and a secondary directory) within *Holmberg*, nothing in *Holmberg* teaches or suggests a secondary server sending an indication, to a client, that a non-idempotent operation, requested by the client in a request sent from the client to the secondary server, was successfully performed by the secondary server even though the secondary server did not perform the non-idempotent operation after receiving the request.

In sharp contrast, the portion of *Holmberg* cited to show this element merely states that the backup server of *Holmberg* “may send an acknowledgement message 211 to the client’s protocol stack 205, thereby confirming receipt of the client’s message.” Acknowledging receipt of a message is not analogous to sending an indication that a particular non-idempotent operation was successfully performed on a secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving a request from the client. Acknowledging receipt of a message merely indicates a message was received, but does not suggest whether or not a particular non-idempotent operation was performed.

Further, this element features sending the indication in response to the recognition that a particular non-idempotent operation has already been performed on the secondary

directory. On the other hand, the backup server of *Holmberg* makes no such recognition for at least the reasons that (a) the backup server performs no operations on any directory, and (b) the backup server does not perform a non-idempotent operation identified in a request that is sent, from the client, because the client has not received confirmation that a primary server has performed the non-idempotent operation on a primary directory.

Consequently, for at least the above reasons, it is respectfully submitted that Claim 48 features at least one element that is not disclosed, taught, or suggested by the cited art. Similarly, independent Claims 52 and 56 feature elements similar to those discussed above with respect to Claim 48, except that Claims 52 and 56 are recited in machine-readable medium and a form expressly recognized by 35 U.S.C. § 112, paragraph 6 respectively. Consequently, it is respectfully submitted that Claims 52 and 56 feature at least one element that is not disclosed, taught, or suggested by the cited art. Thus, each of Claims 48, 52, and 56 are patentable over the cited art and are each in condition for allowance.

Claims 49-51, 53-55, and 57-62 are dependent claims, each of which directly depends on one of the claims discussed above. Each of Claims 49-51, 53-55, and 57-62 is therefore allowable for the reasons given above for the claim on which it depends. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time.

CONCLUSION


For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any fee shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,

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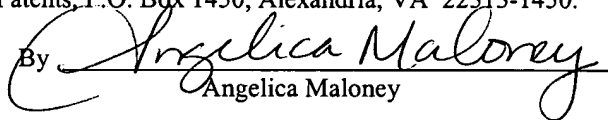
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: **Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

On August 31, 2005

By


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